

Field Notes from Salonika. I.

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It is extremely tantalising to be surrounded by interesting things without the means of identifying them. The scrubby hills and baking plains of Macedonia are practically virgin soil for entomologists, full of things worth collecting and observing, but both collecting and observing must be done at odd moments, when opportunity arises, not always in selected spots, and with improvised material. Salonika apes the towns of Europe, but, it is hardly necessary to say, there is neither library nor collection for reference, and one is thrown back upon a frail memory to recognise one's captures. Consequently notes from the field are untrustworthy, determinations are likely to err, many nice things cannot be identified at all, and points of interest in distribution and variation may be entirely overlooked. Still, notes direct from the field have the advantage of a freshness and directness that is lacking in the dry accounts written up in the study, often months afterwards, when impressions have faded, for not every observation is noted down, and often enough what passes for a great event to-day is forgotten for ever to-morrow.

So perhaps it is worth while putting on record a few notes on collecting in the neighbourhood of Salonika, with the reservation that all identifications are provisional, and subject to correction at a later date.

The first Orthoptera noted were the few common things that hibernate and appear in the early warm days of spring. As early as January 9th an occasional *Epacromia strepens* was seen taking advantage of those brilliant sunny days with which we were favoured in that month; on January 31st I saw a minute grasshopper, apparently a *Stenobothrus*, evidently just hatched. *Acridium aegyptium*, L., was fairly common in April; the first specimen was brought me on the 4th. About the same date Pte. Barraud sent me *Acrotylus patruelis*, Sturm., *Platyphyma giornae*, several minute Decticids and Phaneropterids just hatched, and a *Grylotalpa grylotalpa*, L. The latter is common enough, and was often found when dug-outs were being made. In April and May, on the Lembet plain and slopes of the adjoining hills, where there was practically no vegetation, a small cricket used to strike up about sunset; time after time I tried to stalk him down, but he was so timid, and the twilight so short, that my patience was never rewarded even by a glimpse of the creature; it was a peculiarly musical chirrup, and on listening attentively and at close quarters, it was just possible to detect the faint sound of a deeper note at the beginning of each song; from the type of stridulation, and the nature of the habitat, I think it must have been a *Gryllodes*. Three day's violent rain at the end of April must have drowned out all these little dwellers in dug-outs, for after that we never heard their cheerful piping again.

The end of March was marked by the arrival of the first swallows (March 31st); storks were reported as early as the 14th of the month; there is a pair nesting in some tall trees at the back of the Turkish cemetery just outside that part of the Egnatian Way, which is known to the lorry-drivers as "Piccadilly Circus," and they are a familiar sight to those who go into town. The Egyptian vulture, *Neophron percnopterus*, which looks very like a stork on the wing, is a spring

SEPTEMBER 15TH, 1916.

visitor here as he is in the Caucasus; I saw the first one on April 8th. A very welcome arrival was the beautiful bee-eater *Merops apiaster*, L., which was seen in numbers on April 19th; this exquisite creature is very tame; he hawks up and down the little gullies and ravines, flashing and disappearing in the brilliant sunlight, uttering a whipling chirrup, and occasionally showing himself off to advantage by sitting on a projecting twig, or on top of a shrub, or telephone pole, surveying the country round, and sometimes diving at a passing dragonfly or other passing insect. The blatant roller, *Coracias garrulus*, turned up about the same time, but frequents the more wooded districts, and is seldom seen on the treeless plain of Lembet. The bee-eater and roller attracted general attention at once by their brilliant coloration; the former is usually called a "kingfisher," and the latter a "jay" or a "parrot."

Towards the end of May, Orthoptera became more noticeable; *Sturoderus bicolor*, Charp., and *Omocestus rufipes*, Zett., are very common, and numerous other species were abundant in the earlier stages; young specimens of *Saga*, various Dectidids are seen, and tantalise. On the tall, terribly spiny, purple-flowered thistles which grow commonly on the plain, a number of beetles and Rhynchota collect; a pretty little *Hololampya* is common on it, a little black fellow, with pronotum and elytra bordered with white; I think it is *H. marginata*, Schreb. The only other Blattid which I have come across is *Loboptera decipiens*, of which I have taken a few immature specimens under stones. While rummaging among some refuse my fingers came into contact with something round and hard; it was a shrapnel bullet, a touch of local colour that added an interest to collecting.

I was camped for several weeks on the top of some gently rising ground, with dry stony soil, and no vegetation but some spare scraggy grass, a few thistles, and some succory. This slope abounded in Orthoptera. On May 27th I took a *Celes variabilis*; as its name implies, this species is of inconstant colouring, and there are races with the wings white, blue-green, and deep red; it is the latter race which occurs here, and a very handsome fellow it is, as the general colour is deep black, that is, in the male; the female is mottled with grey on a dark ground; both are conspicuous, the dark colour showing up distinctly when they are settled on the sparsely covered ground, and the red flash of their wings attracting attention to them directly they make a short flight; I noticed the same thing on the steppes of Boz, in the Transcaucasus, last summer, where the same race occurs. As soon as June was well in *Celes* appeared in numbers, as did *Docio-staurus brevicollis*, Eversm., a common but pretty little grasshopper occurring in numbers on dry waste land practically throughout the Mediterranean province.

But the most persistent and noticeable Orthopteron on this dry ground is a brachypterous Dectid, with decurved ovipositor, referable, I think, to *Gampsocleis*, which I shall call him until I get him identified; the immature specimens were all green, but adults, appearing first early in June, are mottled brown; a good proportion retain a dark green background for a day or two after the final change of skin, and perhaps a few may do so permanently, but in the vast majority of cases the green background turns into a deep brown or rich maroon. They are extremely active and fierce; when captured they bite savagely, but

they are so nimble that it is difficult to catch them without a net; they take two or three long bounds of five or six feet in length, and laugh at attempts to catch them with the fingers; but they are fond of sitting on top of a thistle or bit of succory, chirping with a rather loud and persistent stridulation; if carefully approached it is not very difficult to catch them with a rapid and sweeping stroke. I saw one bounce on to a male *Celes*, roll him over in spite of his vigorous kicking, stand across him, and bury his powerful mandibles in his sternum; *Celes* continued to kick spasmodically till his sternum was nearly eaten away; when disturbed, the *Gampsocleis* made off in two or three bounds, carrying his relatively bulky prey with him; the ruling passion is strong in death; one, on being plunged into a tube of alcohol, seized the nearest object, which was the leg of his predecessor in the tube, and never let go. Another day I placed a tinful of Orthoptera in the sun to dry; almost instantly a *Gampsocleis* strolled round the corner, walked up to the box, and quietly gripped a dead grasshopper in his jaws, and made off with him.

Other Dectioids occurring in the same locality are *Decticus verrucivorus*, L., on the higher ground, and *D. albifrons*, Fabr., on the lower; the latter seems a somewhat smaller race than those which I have taken in other districts in the Mediterranean provinces. One or two species of *Platycoleis*, of the *P. grisea* group, which I cannot name without books, and on the flat, a small, pale, brachypterous species with short curved ovipositor, of the *P. tessellatus* group, are common, but the latter maturing rather late in June. One other Dectioid common enough on the flat, and not mature before the end of June, has a characteristic coloration; it is of a general pale grey, with a very persistent black spot on the upper surface of the posterior femora near the base, bright red-brown jaws, with black frons, and a rather long, straight ovipositor.

On June 29th, in a little gulch near the camp, we found numbers of *Nemoptera coa*. This is an elegant creature, fluttering feebly from plant to plant, his long tail-like hindwings trailing behind like balancers. Ant-lions, too, are weak on the wing; the big black and buff *Palpares libelluloides* flaps about on the plain commonly enough, and a small, plainly coloured species comes to light in the tents every evening, and can be easily picked up in the fingers. *Ascalaphus* is much stronger on the wing; I have taken three species here, two with plain wings, and one handsome black and yellow species, which I think is *A. kolyvanensis*. These hover and fly with a dash, and require some catching, even with a butterfly net. The third species has hyaline wings with one dark spot.

On May 29th, my friend Captain Powell, who constantly helped me in the field, brought me a female *Dinarchus dasypus*, which he had found cowering under some scrub. A little later we took two more, both males, and kept them alive for a long time. They make quite entertaining pets; I have described them in another note; but we did not find any more for a long time, although we kept a sharp ear open for their loud and characteristic song, and it was not until July 3rd that any more were found, when some R.A.M.C. friends came across a colony of them.

Another interesting creature that was about in June was a fat, brachypterous CEdipodid, which I think is *Glyphanus*.

This is a thick-set *Edipodid*, which seems to resemble *Nocarodes* of the east, and *Ocnerodes* of the west. I first saw young larvæ in a pretty ravine known as the "Happy Valley," as early as May 5th; these were of a light fawn colour, but the neck membrane, between the pronotum and base of the head capsule is a brilliant ultramarine, only visible when the creature stretches its head forward. Three weeks later I took a nymph, and on the 31st of the month Captain Powell found an adult female. For the first three weeks in June the adult insect occurred sparingly on the dry plain, but disappeared before the end of the month. There is considerable variation of colour, from a pale delicate fawn, through deep cream to rich fleshy pink, and grey-brown to deep brown; the males are about half the size of the females, and darker in colour, some running almost to a deep prussian blue; but the pattern is constant, that is to say, the metazona of the pronotum is invariably blackish, with a fine white border; the inner face of the posterior femora has a deep blue big spot, and the rest of the surface is canary yellow, which colour is, as it were, washed on to the contiguous sides of the abdomen; the brilliant blue neck membrane is also constant; the whole of the lower surface of the body in both sexes is dead white. When they jump they turn their belly upwards in the air, so that a white flash is seen, disappearing directly the insect settles, and assimilates with the ground coloration. Thus, although this species is incapable of flight, we get the same effect that is seen in the species with the coloured wings, though by a different process. I noticed that on the sides of the first two abdominal segments in both sexes, there is a roughened patch like emery paper; this suggests that the insect can stridulate, and in both sexes, but I was never able to detect the production of any sound. I kept a number alive for some time; they copulated freely in confinement, the male remaining attached to the female for hours at a stretch; they are sluggish animals, easily caught with the fingers. Unfortunately, they lose their beautiful delicate colouring on dying; the belly turns black, and the upper surface to a dull grey or blackish-brown; only the blue and yellow remain; the lining of the thighs is seldom noticeable, and the brilliant blue of the neck membrane only shows when the creature stretches its head out in walking and eating.

By the first week in June a few adult *Caloptenus italicus*, L., were seen; by the end of the month they were extremely numerous, and larvæ and nymphs occurred in thousands; *Edaleus nigrofasciatus*, the delightful *Edipoda selina*, Pall. (= *gratiosa*, Serv.), and *Aerotylus insubricus*, Scop., are common objects of the plain by the end of June, flashing their pretty wings in the sunlight; the latter flies freely to light, and was a frequent visitor to the mess tent in the evenings. Another frequent visitor is the mole cricket, which comes dashing clumsily in, and scuttles about on the floor looking for cover; another cricket, I think it is *Nemobius heydenii*, flies in on warm still evenings; he has an erratic, dashing flight, and is very nimble when settled, and so takes a lot of catching. The *Gampsocleis* referred to above is also quite domesticated; he commonly comes into the tents in search of flies, and so is a welcome visitor; one, who had lost one hind leg, but seemed none the worse for that, made himself quite at home in the mess for several days, and hopped freely about the table, catching flies, and eating freely from the hand. *Platycleis grisea*, and the rarer brown-

headed *Dectid*, also come in and crawl up the mosquito netting in search of flies.

On June 18th, I took a pair of graceful yellow-winged *Arcyptera*, probably *A. flavicosta*, and found *Chorthippus pulvinatus* in numbers in certain localities on the plain, together with a *Stauroderus* that may be *S. vagans*, Charp. *Xiphidium fuscum*, Fabr., is not very common, but mature at the end of June, and early in July the graceful *Tylopsis liliifolia*, sometimes green, sometimes buff, is adult; I have not yet seen the marked form, *marginoguttata*; nymphs are still numerous. On July 4th, Captain Powell brought in a male *Acrometopa macropoda*, a handsome and delicate Phaneropterid like *Tylopsis*, but two or three times larger; this species occurs only in the extreme south of the eastern Mediterranean coasts.

There is a species of *Saga*, which is far from rare here, but I do not know what species it is, as it is decidedly smaller than the south central European *S. serrata*, and a great deal smaller than the other Levantine species, I am inclined to think it is new; it is of a uniform grass-green as a rule, but one female, rather a big one, after a day in captivity, turned to a greyish-brown, freely mottled with white; the ovipositor in this specimen was deformed; another female was of this marbled pattern when in the nymph stage, as late as July 4th, but all the others were plain green. They are sluggish creatures, walking with a slow, methodical, curious swinging gait, constantly stooping to lick the soles of their dilated tarsi, which have a powerful sucking action, so that these big insects can stand on a pane of glass like a fly. They are quick enough in their movements when they pounce on their prey. I fed them on grasshoppers; a larva of *Acrida* was seized by the frons, and the skin only eaten, the interior of the body being rejected; adult grasshoppers were seized by the head, held by the powerful spiny front legs, and methodically chewed down from head to tail, in spite of its kicks, only the horny parts, the elytra, wings, and legs being rejected. One soft specimen, barely out from the old skin, was evidently a toothsome morsel, for it was chewed right up from end to end; the front legs are used for clasping the prey, as a squirrel holds a nut, and the femora are slightly thickened; they are, indeed, more noticeably thickened than the posterior femora. I kept a pair alive for some time, but in separate cages, for fear they would fight and mutilate each other; one day, a friend of an enquiring turn of mind, put the two together; the male at once approached the female and stood alongside her, "top and tail," gripped her ovipositor firmly in his mandibles, and, curving up the posterior end of the abdomen forwards towards the apex of her abdomen, deposited a pellucid bag containing the spermatophores; after a couple of minutes he let go, and remained quiet.

Early in July, Lieut.-Col. Parsons, R.A.M.C., and Captain Ewens, R.A.M.C., both fired with the fever of collecting, discovered a small colony of *Dinarchus dasypus*, and took me to the spot; I found them sitting high up on thorny shrubs, *Eleagnus* I think, and quite conspicuous. We took four males, and put them in a cage together, but, though apparently vegetarians, they opened their powerful mandibles, and started fighting, so for fear of seeing the specimens spoilt, I very reluctantly killed these portly fellows, who make quite friendly and entertaining pets.
